DOOSAN Document Transmittal

Upper Trishuli-1 HEP (216MW)

Date	DT No.:	SHEET
2023-07-14	UT1-HEP-DHI-PC-D-0194	1 OF 1

DOOSAN NEPAL BRANCH OFFICE	Address & Contact No. : Four Square Building, Naxal, Kathmandu, Nepal (P.O Box : 1387) + 977 1 692 3014	Project No. H20002	DOCUMENT DISPATCHED BY Courier Service ☐ Messenger ☐ Post-Air Freight ☐ Document System or E-mail ■ By hand ■
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SUBJECT	Submission of Review Note RN-0730 and RN-0731		

S. N.	REVIEW NOTE NO.	REVIEW STATUS	DWG. / DOC. NO.	REV.	DWG. TITLE / DOC. DESCRIPTION	REMARK
1	RN-0730	FI	UT1-C-020-CVL-TE-44001	0	Falling Head Permeability Test for UT-1 HEP	2 SHEET
2	RN-0731	RR	UT1-C-000-CVL-DG-40001	3A	Detail Design Drawing of Excavation and Support for Underground Cavern & Design Change Notification	3 SHEET
3						
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10						
11						
12						

Received by :

Date :

Legend of Review Status
A : APPROVED
AN : APPROVED AS NOTED
RR : RETURN FOR RESUBMISSION
FI : FOR INFORMATION

DE STAMP

Doosan Enerbility Co., Ltd
DOOSAN Enerbility
Branch Office Nepal

Issued by Doosan Enerbility

for BK CHOI

Youngsoo Son

Project Manager

Email: youngsoo.son@doosan.com
Doosan Enerbility Co., Ltd.

Discipline : Civil

UPPER TRISHULI-1 HEP (216MW)

Client	**Nepal Water and Energy Development Company Private Limited**
Owner's Engineer	**Tractebel Engineering GmbH / Jade Consult**

REVIEW NOTE

Contractor	**Doosan Enerbility**		
Title of the Document	Detail Design Drawing of Excavation and Support for Underground Cavern & Design Change Notification		
Document No.	UT1-C-000-CVL-DG-40001	Revision	3A
Date of Documents	11.07.2023	Received Date	11.07.2023
Transmittal Form No.	UT1-HEP-DHI-D-0880		
Previous Review Date/Status	07.06.2023/FC	Prev. Review Note No.	N/A
Review Note No.	**RN-0731**	**Present Review Date**	**14.07.2023**
		Present Review Status	**RR**

A: Approved AN: Approved as Noted RR: Returned for Resubmission FI: For Information, only

Comments:

The document under this review has previously been approved by OE with Review Note *RN-0651*, dated 03.06.2023 and the document has been submitted by the EPC Contractor "For Construction", dated 07.06.2023.

The current revision Rev.3A as per Design Change Notification doc. ref.: *DCN-23-C-007* is rejected as per ANNEX 1 attached to this Review Note.

Disclaimer:

Any approval will not release the Contractor from any of his obligations under the Contract. Despite the Engineer's approval the Contractor remains fully responsible for design, calculation, dimensioning, supply, and installation without limitations.

Expert's Name: Dr. U. Glawe

(Signature)

Sebastian Beck, Chief Design Engineer

RN-0731, ANNEX 1

DOOSAN	Design Change Notice	DCN No. DCN-23-C-007
	UPPER TRISHULI-1 HEP (216MW)	GRADE : A
		PAGE: 1 OF 2

REQUESTER :

■CIVIL ☐ARCHI. ☐MECH. ☐ELEC. ☐I&C ☐PIPING ☐HVAC

☐ Others ( )

☐NWEDC ■O/E

REFERENCE DOCUMENT NO.	REV	REMARKS / TITLE
UT1-C-000-CVL-DG-40001	3A	Detail Design Drawing of Excavation and Support for underground cavern

REASONS FOR CHANGE:

The drawings were changed according to the specifications to make the site construction more clear. For details as follows:

UT-1 HEP Annex 13 Part C, Chapter 13.2.2D.

> D. The groutable bolt assemblies shall be provided with positive means of sealing the hole at the bearing plate, and grouting at the lowest elevation of the hole whole expelling air at the highest elevation of the hole.

DESCRIPTION OF CHANGE

Post-grout rock dowel support is added accordingly in revised drawing. For reference, the figure is mentioned below. The grouting procedure for Rock dowel installation is as follows:

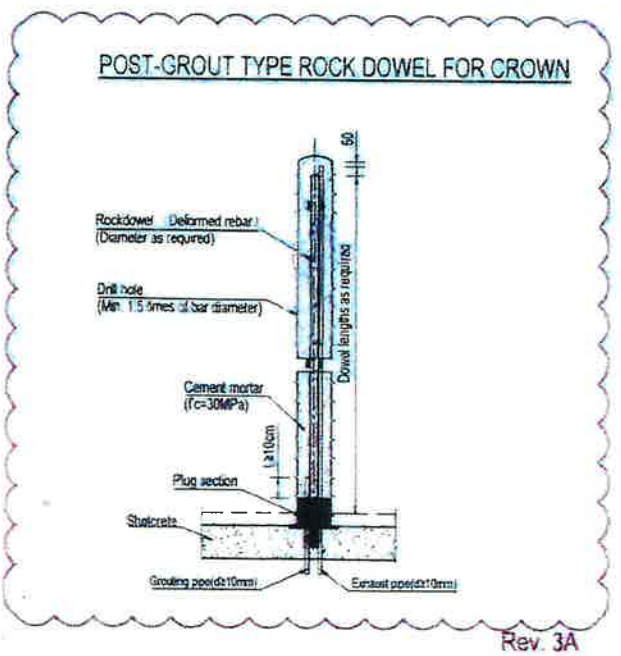
① Drill the desire length of a bore hole.

② Fix the dowel into a hole with inlet injection the pipe and outlet vent pipe.

③ Plugging section length shall be 0.2m to 0.3m and also it can be adjusted according to the length of the rock dowel.

④ The final grout of the dowel the following day. Until out flow from the vent pipe to assure the hole full of grout.

⑤ Pull out the test after 28 days as per specification.



Rev. 3A

PREPARED BY: LV Anning	SIGNATURE: LV Anning	DATE : July 11 2023
CHECKED BY: CHOI B K	SIGNATURE:	DATE: July 11, 2023
ENGINEERING DESCRIPTION : PROPOSED CHANGED ACCEPTED		

CHANGED APPROVED YES ☐ WITH COMMENT ☐ DISAPPROVED ☑

DCN-23-C-007 rejected due to the following reasons;

1. The proposed rock dowels cannot be approved as they were proven unreliable by the failure of the powerhouse roof.
2. The reason for the failure of such support were proven manifold. This is well known to the employers, PQE's and the contractor.
3. The experience made in the UT1 project does not allow an approval of potentially unreliable support for all underground works.

~~APPROVED BY~~ Rejected; Prahal Bcaniya	SIGNATURE: Pbcaniya	DATE : July 12, 23

DOCUMENT INCORPORATION (LIST OR DESIGN DOCUMENT(S) REVISED TO INCORPORATE DCN)

DOCUMENT NO.	REV	REMARKS/TITLE
UT1-C-000-CVL-DG-40001	3A	Detail Design Drawing of Excavation and Support for underground cavern

Grade A : urgent/major change, Grade B: Major Change but not urgent, Grade C: Minor Change